

presented its detailed, final report to the assembled leadership of the nation's armed services. LeMay summarized the report's central conclusions, which reflected a significantly upgraded evaluation of the weapon's potential power:

- X (1) Atomic bombs *in numbers conceded to be available in the foreseeable future* can nullify [sic] any nation's military effort and demolish its social and economic structures.
- X (2) In conjunction with other mass destruction weapons *it is possible to depopulate vast areas of the earth's surface, leaving only vestigial remnants of man's material works.*
- (3) The atomic bomb emphasizes the requirement for the most effective means of delivery. *In being there must be the most effective atomic bomb striking force possible.*<sup>19</sup>

X The Bikini board also concluded that because of the scarcity of fissionable material the bomb would have to be used as a "strategic" weapon against urban industrial targets and not—except in extraordinary situations—against naval vessels or troop concentrations.

X The board recommended that in the absence of "acceptable guarantees of permanent peace" the United States should continue developing improved atomic weapons, initiate "continuing selection of atomic bomb targets," begin work on civil defense measures against possible attack, and develop an intelligence system capable of monitoring an enemy's progress toward nuclear readiness; and that Congress should redefine "aggressive acts" so as to prepare for the possibility that a preemptive strike by the United States might be necessary to defend against a nuclear armed enemy.<sup>20</sup> The JCS evaluation board report did not convince American military planners that use of the atomic bomb would be decisive in the event of war. But it did increase the military's confidence in the weapon's capability and, by making information about it more generally available, assured it a central role in future strategic planning.

X In October 1947, the Joint Strategic Survey Committee reported back to the JCS on long-term requirements for nuclear weapons production. Based on its recommendations, the JCS informed the chairman of the AEC that "a military requirement exists for approximately 400 atomic bombs of destructive power equivalent to the Nagasaki type bomb."<sup>21</sup> Such a stockpile would be "satisfactory until such time as any possible enemy country possesses atomic weapons in quantity and an air force capable of launching a massive attack on the United States."<sup>22</sup> Dropped on approximately 100 urban targets, the stockpile might be adequate to implement the chilling concept of "killing a nation"

<sup>19</sup> LeMay to Carl Spaatz (ca. July 28, 1947), OPD 384.3 (17 August 1945), section 8, Papers of the Chief of Staff of the Air Force. See also JCS 1691/10, Dec. 29, 1947, CCS 471.6 (10-16-45), section 9, part 2, Papers of the United States Joint Chiefs of Staff.

<sup>20</sup> JCS 1805, Sept. 23, 1947, CCS 471.6 (10-16-45), section 9, part 1, Papers of the United States Joint Chiefs of Staff. Most of the board's recommendations were implemented, except for the redefinition of "aggressive acts" to prepare for a possible preemptive strike. The Bikini board's recommendations were dropped from consideration on January 9, 1950. See JCS 1805/7, June 15, 1948, and JCS 1805/18, Jan. 9, 1950, CCS 471.6 (10-16-45), section 9, parts 2 and 3, *ibid.*

<sup>21</sup> Leahy to chairman, Atomic Energy Commission, Oct. 29, 1947, CCS 471.6 (8-15-45), section 7, *ibid.*

<sup>22</sup> Decision on JCS 1745/7, Dec. 17, 1947, CCS 471.6 (8-15-45), section 8, *ibid.*



through total destruction of its urban industrial base, a concept that had emerged in the air force Directorate of Intelligence during the process of preparing these recommendations.<sup>23</sup> The JCS timetable for atomic production was ready by December. Although its interim goals are classified, it called for all 400 bombs to be ready by January 1, 1953.<sup>24</sup>

In late 1947 and early 1948, a series of international crises increased pressure on American military planners to develop a workable plan for atomic war. The country's reluctance to support partial mobilization of conventional forces, which the JCS thought necessary to confront the worsening international situation in the eastern Mediterranean, the coup in Czechoslovakia, and the developing crisis in Berlin, combined to create a sense of urgency in preparing for war.<sup>25</sup>

On May 19, 1948, the JCS approved a postwar Joint Emergency War Plan, "Halfmoon," to be circulated for planning purposes. "Halfmoon" called for destroying "the will of the U.S.S.R. to resist by a main offensive effort in Western Eurasia and a strategic defensive in the Far East." Although it envisioned maintenance of a substantial foothold in Western Europe and lines of communication through the Mediterranean, the keystone of the plan was "a powerful air offensive designed to exploit the destructive and psychological power of atomic weapons against the vital elements of the Soviet war making capacity."<sup>26</sup> The air force's "Harrow" plan became the basis for air-offensive planning under "Halfmoon"; it called for dropping fifty atomic bombs—apparently all that were available in the late spring of 1948—on target systems in twenty Soviet cities in order to cause "immediate paralysis of at least 50 percent of Soviet industry."<sup>27</sup>

President Truman, however, upon being briefed by JCS planners on "Halfmoon" on May 5, 1948, ordered the development of an alternate plan based

<sup>23</sup> See JCS 1745/15, July 27, 1948, CCS 471.6 (8-15-45), section 11, *ibid.*, for a description of the target criteria. Robert Frank Futrell describes the "killing a nation" concept. Robert Frank Futrell, *Ideas, Concepts, Doctrine: A History of Basic Thinking in the U.S. Air Force, 1907-1964* (2 vols., Maxwell Air Force Base, Ala., 1971), I, 218.

<sup>24</sup> For the timetables, see JCS 1745/5, Dec. 8, 1947, CCS 471.6 (8-15-45), section 8, Papers of the United States Joint Chiefs of Staff.

<sup>25</sup> See JCS 1819, Nov. 19, 1947, CCS 381 Eastern Mediterranean and Middle East Area (11-19-47), section 1, *ibid.*; JLPC 349/5, Dec. 23, 1947, in CCS 381 (12-17-43), section 2, *ibid.*; and war planning documents, CCS 381 U.S.S.R. (3-2-46), sections 8-15, *ibid.*, for indications of problems faced by the JCS. See also Walter Millis and E. Duffield, eds., *The Forrestal Diaries* (New York, 1951), 336-450.

<sup>26</sup> JCS 1844/4, Brief of War Plan "Halfmoon," May 6, 1948, and Decision on JCS 1844/4, May 19, 1948, CCS 381 U.S.S.R. (3-2-46), section 12, Papers of the United States Joint Chiefs of Staff.

<sup>27</sup> Comments on "Harrow," appended to Charles P. Winkle to chief, War Plans Division, March 20, 1950, OPD 337 (6 August 1948), section 2, Papers of the Chief of Staff of the Air Force. See George F. Lemmer, *The Air Force and the Concept of Deterrence* (Washington, 1963), 37, for "Harrow" bomb numbers and city numbers. Although the Division of Classification, United States Department of Energy, has refused to declassify exact figures on nuclear weapons cores in the stockpile, Edward B. Giller has released the number of high explosive non-nuclear detonator assemblies for fiscal years 1947-1950. Letter from Giller to the author, Feb. 5, 1976. There were fifty-three of these assemblies in the July 1948 stockpile. This fact, combined with statements in JCS 1823/5 on non-nuclear components and the fifty bombs specified in "Harrow" make a fifty-bomb stockpile in July 1948 a reasonable estimate. JCS 1823/5, July 30, 1948, CCS 471.6 (8-15-45), section 11, Papers of the United States Joint Chiefs of Staff. See also letters from Griffin to the author, Oct. 15, 1975 and Feb. 15, 1977.

solely on conventional weapons. Truman thought the hydrogen bomb more anxious than the atomic bomb. He believed that the hydrogen bomb was necessary for "aggressive" use in the summer of 1948, and that its development was absolutely necessary. The Secretary of Defense was prepared to use atomic weapons, but the air force-originated plan for the use of atomic weapons was not.

Ironically, after the war, it was the hydrogen bomb that would finally be developed. Concerned about spiraling costs, Truman was placing a \$14.4 billion limit on the next eight months of military spending. He had imposed this limit to avoid the compromise of \$1 billion for the hydrogen bomb. The compromise would carry out naval operations and air operations in war. They feared that the hydrogen bomb would be used in Western Europe; it was argued, that the only way to meet an emergency was to have the Cairo-Suez area. The hydrogen bomb was a conventional alternative to the atomic bomb.

Although all the talk was about the reliance on atomic weapons, years after World War II

<sup>28</sup> William D. Leahy, *Leahy: The Story of the United States Joint Chiefs of Staff* (New York, 1966), 246-47; JCS 1844/4, May 19, 1948, CCS 381 U.S.S.R. (3-2-46), section 12, Papers of the United States Joint Chiefs of Staff. The United States Joint Chiefs of Staff may be due in part to G. D. Duffield, ORE 22-48, "Possibilities of the world crisis in the future," Hillenkoetter, Central Intelligence Agency, Folder 122, William D. Leahy, discussions on policy of international atomic energy, 1947, CCS 471.6 (8-15-45).

<sup>29</sup> Millis and Duffield, *The Forrestal Diaries*, 336-450.

<sup>30</sup> NSC-30, "United States Policy on the Hydrogen Bomb," *of the United States: 1948*.

<sup>31</sup> For the bitter debate over the hydrogen bomb, see Secretary James Forrestal, "The Hydrogen Bomb," *Packages, Papers of the Secretary of Defense, 1800/18*, Nov. 15, 1948. See also *Politics of National Defense and Defense Budgets, 1948*.



solely on conventional forces. Unlike the JCS, which by July 1947 was convinced that international control of atomic weapons would not be achieved, Truman thought the bomb might be outlawed by the time war came. Less anxious than the military about an imminent outbreak of hostilities, he believed that the American people would not tolerate the use of atomic weapons for "aggressive purposes."<sup>28</sup> As the Berlin crisis deepened during the summer of 1948, however, the alternate plan that the JCS had begun to develop was abandoned. On September 13, Truman reluctantly assured Secretary of Defense James Forrestal that "if it became necessary," he was prepared to use atomic weapons,<sup>29</sup> and three days later he endorsed NSC-30, an air force-originated document that discussed the military's need to plan for the use of atomic weapons in the event of war.<sup>30</sup>

Ironically, after rejecting "Halfmoon," Truman himself initiated a process that would finalize American dependence on the atomic air offensive. Concerned about spiraling inflation, he announced on May 13, 1948, that he was placing a \$14.4 billion ceiling on the Fiscal Year 1950 defense budget. During the next eight months, despite military protests, he refused to raise the limit he had imposed. The JCS estimated that a budget of \$21-23 billion, or even a compromise of \$16.9 billion, would allow the United States to maintain adequate conventional forces to retain some foothold in Europe as well as to carry out naval operations in all or part of the Mediterranean in the event of war. They feared that the \$14.4 billion budget would result in the total loss of Western Europe; conventional forces would have to be cut back so far, the JCS argued, that the only offensive operation the United States could undertake to meet an emergency would be an atomic air offensive from the British Isles and the Cairo-Suez area.<sup>31</sup> The president's continuing refusal to budget adequate conventional alternatives thus made the United States virtually dependent on the atomic bomb.

Although all the services resisted Truman's budget cutting, the forced reliance on atomic strategy was particularly disturbing to the navy. For three years after World War II, naval officers had focused on maintaining the navy's

<sup>28</sup> William D. Leahy Diary, May 5-6, 1948, cited in Robert H. Ferrell, *George C. Marshall* (New York, 1966), 246-47; JCS 1844/6, May 13, 1948, CCS 381 U.S.S.R. (3-2-46), section 15, Papers of the United States Joint Chiefs of Staff. Harry S. Truman's calm in the face of the Russian threat may be due in part to Central Intelligence Agency (CIA) reports he was receiving. See CIA Report ORE 22-48, "Possibility of Direct Soviet Military Action During 1948," April 2, 1948, ORE 1948 (Reports No. 21-29) folder, NSC Intelligence File, President's Secretary's File. For various aspects of the world crisis in 1948, see the many memoranda for the president from CIA Director R. H. Hillenkoetter, Central Intelligence Memorandums 1945-1948 folder, NSC Intelligence File, *ibid.*, and Folder 122, William D. Leahy Files, Papers of the United States Joint Chiefs of Staff. For JCS discussions on policy options in the event of a "continuing impasse" in the attempt to gain international atomic energy control, see JCS 1764 through JCS 1764/4, July 14, 1947 to Aug. 13, 1947, CCS 471.6 (8-15-45), section 5, *ibid.*

<sup>29</sup> Millis and Duffield, *The Forrestal Diaries*, 487.

<sup>30</sup> NSC-30, "United States Policy on Atomic Warfare," Department of State, *Foreign Relations of the United States: 1948*, Vol. I: *General: The United Nations* (Washington, 1976), 624-28.

<sup>31</sup> For the bitter debates on the 1950 budget, see Minutes of Meetings between the JCS and Secretary James Forrestal, Oct. 3, 4, and 5, 1948, CCS 370 (8-18-45), section 10, part 1, and Bulky Packages, Papers of the United States Joint Chiefs of Staff; JCS 1800/16, Nov. 17, 1948, and JCS 1800/18, Nov. 15, 1948, CCS 370 (8-18-45), section 11, *ibid.* See also Warner R. Schilling, "The Politics of National Defense: Fiscal 1950," Schilling, Hammond, and Snyder, *Strategy, Politics, and Defense Budgets*, 1-266.



forces and prerogatives against the onslaughts of unification, technological challenge, and the apparent dominance of land-oriented strategic concepts for future war. By summer 1948 it had become apparent that not only the navy's role, but its entire understanding of strategy and warfare, was being threatened: war between armed forces was being replaced by war against supporting civilian populations.<sup>32</sup> Following the 1948 budget cuts, Rear Admiral Daniel V. Gallery, the assistant chief of naval operations for guided missiles, summed up the navy's doubts about this emerging philosophy:

... 2) For a "civilized society" like the United States, the broad purpose of a war cannot be simply destruction and annihilation of the enemy. At best this could merely be a means towards the end of forcing him to cease resistance and comply with our wishes.

3) The above idea is elementary, but in my opinion many of our military planners are losing sight of it. They seem to feel that if we ever have another war, the *only* objective will be "Not to lose it" and so they have adopted the Douhet concept of flattening the enemy's cities from the air.

4) If our *only* objective in war is to avoid military defeat while the shooting is going on, then perhaps a Douhet war is the easiest way to accomplish the objective.

5) However, even this kind of war is not as simple as the prophets of the ten day atomic blitz seem to think. Some authorities estimate that the damage done by strategic bombing of Germany was equivalent to 500 Atomic Bombs. But Germany did not surrender until her armies were defeated. This damage is costing the U.S. huge sums of money now. In addition, levelling large cities has a tendency to alienate the affections of the inhabitants and does not create an atmosphere of international good will after the war.

6) A strategy based on the sole object of preventing defeat in war is an unworthy one for a country of our strength. It is a strategy of desperation and weakness. I believe we should abandon the idea of destroying enemy cities one after another until he gives up and find some better way of gaining our objective.<sup>33</sup>

By fall 1948 many air force planners had come to believe that the atomic air offensive would be adequate to achieve victory. LeMay, who assumed command of the Strategic Air Command (SAC) in October 1948, immediately set to work preparing a feasible strategic plan for atomic operations against the Soviet Union. His plan, SAC Emergency War Plan 1-49, called for SAC "to increase its capability to such an extent that it would be possible to deliver the entire stockpile of atomic bombs, if made available, in a single massive attack." When combined with JCS targeting requirements, as spelled out in war plan "Trojan," the SAC plan entailed strikes on seventy Soviet urban target areas with 133 atomic bombs within thirty days.<sup>34</sup> Primary objectives would

<sup>32</sup> See David A. Rosenberg, "The Search for Maturity in American Postwar Air Doctrine and Organization: The Navy Experience," *Air Power and Warfare: The Proceedings of the Eighth Military History Symposium, United States Air Force Academy, 18-20 October, 1978*, ed. Alfred F. Hurley and Robert C. Ehrhart (Washington, 1979).

<sup>33</sup> Daniel V. Gallery to the deputy chief of naval operations (air), Jan. 17, 1949, MLC-AEC folder, Box 8, Papers of Vice Admiral Ralph Ofstie (Operational Archives, Naval Historical Center, Washington). The term "Douhet war" refers to the kind of bombing campaign against enemy cities and populations espoused by Italian strategist Giulio Douhet.

<sup>34</sup> Thomas S. Power to chief of staff, U.S. Air Force, April 1, 1950, OPD 381 SAC (23 March 1949), TS, section 2, Papers of the Chief of Staff of the Air Force. For bomb numbers and targets, see JCS 1952/11, Feb. 10, 1950, Weapons Systems Evaluation Group Report 1, CCS 373

be urban industrial targets would include the electric power. Chief of Staff H. lead to Soviet capability for offense.

Air force confidence service pride and reflected a substantial January 1949, SAC B-29s and B-50s modified as aerial one more in training alleviated, and two had proven so effective Mark IV bomb as still being analyzed production could the AEC confidence require less fissile 400 bombs the JCS years ahead of schedule.

With the AEC and with the size ever as a result of to revise the Defense production came defense-spending backs in other military the AEC that "increased requirements for space and extended." Requirements in progress were completed.

The most significant Defense Forrester

{10-23-48}, section 6, section 15, Papers of the Dropshot: The United

<sup>35</sup> JCS 1952/1, Dec. Joint Chiefs of Staff. SAC (12-1-47), section 1, ibid.

<sup>36</sup> SAC Aircraft Station History, 1949, Vol. V 1745/18, Dec. 2, 1948 of Staff.

<sup>37</sup> JCS 1823/6, Aug. 12, Papers of the United Energy Commission, 15, Papers of the United

<sup>38</sup> JCS 1823/11, Dec.



X be urban industrial concentrations and government control centers; secondary targets would include the petroleum industry, transportation networks, and the electric power industry. In describing this offensive to the JCS, Air Force Chief of Staff Hoyt S. Vandenberg noted that successful execution "could well lead to Soviet capitulation and in any event would destroy their overall capability for offensive operations."<sup>35</sup>

Air force confidence in the proposed atomic air offensive grew in part out of service pride and necessities imposed by the 1950 budget ceiling, but it also reflected a substantial improvement in American nuclear readiness. By January 1949, SAC had more than 120 nuclear capable aircraft, including thirty B-29s and B-50s modified to receive air-to-air refueling from nineteen B-29s modified as aerial tankers. Six bomb assembly teams were in operation, and one more in training.<sup>36</sup> Nuclear production problems at Hanford had been alleviated, and two of the three nuclear cores tested in the "Sandstone" series had proven so efficient that they were placed in production, as was the new Mark IV bomb assembly. In August 1948, while the "Sandstone" tests were still being analyzed, the AEC informed the JCS that year-end goals for nuclear production could not be met. Shortly after analysis was completed in October, the AEC confidently predicted that, because the more efficient cores would require less fissionable material, interim goals could be met and the total of 400 bombs the JCS had requested would be available by January 1, 1951, two years ahead of schedule.<sup>37</sup>

With the AEC raising its estimates of United States production capability, and with the size of the nuclear stockpile more critical to the military than ever as a result of limitations on available conventional forces, the JCS decided to revise the December 1947 production schedule. Since atomic weapons production came under the AEC budget, it was not subject to Truman's defense-spending ceiling and could be expanded without necessitating cut-backs in other military programs. In January 1949 the Joint Chiefs informed the AEC that "it is now evident that the currently established military requirements for scheduled bomb production should be increased substantially and extended." Revised estimates would be forwarded as soon as studies then in progress were completed.<sup>38</sup>

The most significant of these studies had been requested by Secretary of Defense Forrestal on October 23 and 25, 1948. Forrestal, who had reservations

(10-23-48), section 6, Bulky Package, and JCS 1823/14, May 27, 1949, CCS 471.6 (8-15-45), section 15, Papers of the United States Joint Chiefs of Staff. See also Anthony Cave Brown, ed., *Dropshot: The United States Plan for War with the Soviet Union in 1957* (New York, 1978), 6.

<sup>35</sup> JCS 1952/1, Dec. 21, 1948, in CCS 373 (10-23-48), section 1, Papers of the United States Joint Chiefs of Staff. See also JCS 2057, Aug. 25, 1949, and JCS 2057/1, Nov. 4, 1949, in CCS 381 (12-1-47), section 1, *ibid*.

<sup>36</sup> SAC Aircraft Status and Projection, Jan. 18, 1949, Exhibit 194, *Strategic Air Command History, 1949*, Vol. VII: *Supporting Documents* (Simpson Historical Research Center); JCS 1745/18, Dec. 2, 1948, CCS 471.6 (8-15-45), section 13, Papers of the United States Joint Chiefs of Staff.

<sup>37</sup> JCS 1823/6, Aug. 18, 1948 and JCS 1823/7, Oct. 21, 1948, in CCS 471.6 (8-15-45), section 12, Papers of the United States Joint Chiefs of Staff; Hewlett and Duncan, *History of Atomic Energy Commission*, II, 164-65, 178; JCS 1823/14, May 27, 1949, CCS 471.6 (8-15-45), section 15, Papers of the United States Joint Chiefs of Staff.

<sup>38</sup> JCS 1823/11, Dec. 28, 1948, CCS 471.6 (8-15-45), section 13A, *ibid*.